Letter ID	Commenter Name	Commenter Org.	Text
00546	Ex. 6 Personal Privacy (PP)	Oglala Sioux Tribe	The Oglala Sioux Tribe possesses reserved water rights to the Cheyenne River, under the legal principles established in *United States v. Winters,* 207 U.S. 564 (1908). The interconnection of the Madison and Minnelusa aquifers and of ground and surface water at artesian springs threatens the Cheyenne headwaters with contamination. The EPA lacks adequate data to demonstrate that our waters will remain protected.
00031	Ex. 6 Personal Privacy (PP)	Individual	7. References Kyllonen, David, and Kathy Peter. "GEOHYDROLOGY AND WATER QUALITY OF THE INYAN KARA, MINNELUSA, AND MADISON AQUIFERS OF THE NORTHERN BLACK HILLS, SOUTH DAKOTA AND WYOMING, AND BEAR LODGE MOUNTAINS, WYOMING". www.usgs.gov. N.p., 2017. Web. 30 Mar. 2017.
00294	Ex. 6 Personal Privacy (PP)	Individual	Citations: Kyllonen, D.P., & Peter, K.D (1987). Geohydrology and water quality of the Inyan Kara, Minnelusa, and Madison aquafers of the northern Black Hill, South Dakota and Wyoming, and Bear Lodge Mountains, Wyoming [PDF Document]. Retrieved from https://pubs.usgs.gov/wri/1986/4158/report.pdf
00555	Ex. 6 Personal Privacy (PP) Standing Rock Sioux Tribe	Standing Rock Sioux Tribe	The EPA acknowledges that there is downward flow from the Minnelusa formation into the Madison formation, but discounts the potential for migration upward. (EPA, Dewey-Burdock Class V Draft Area Permit Fact Sheet, p. 30). The Madison aquifer is the source for artesian springs in this area. Contamination of the Madison formation potentially impacts surface water through artesian springs. According to USGS, Aquifer interactions can occur at artesian springs, which discharge about one-half of average recharge to the Madison and Minnelusa aquifers in the Black Hills area. Various investigators have hypothesized that the Madison aquifer is the primary source for many artesian springs. (Naus et al, Geochemistry of the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota, Water Resources Investigations Report 01-4129, 2001, p. 2).
00013	Ex. 6 Personal Privacy (PP)	Individual	Subject: Class III, Class V, Dewey Burdock Comment I am a landowner and rancher who lives 30 miles from the proposed uranium site. My wells use the Madison and Minnelusa aquifers and other shallow wells to support our cattle and our own water consumption. If Azarga is allowed to use this water supply there is no guarantee that it could sustain 10 years if in situ mining and our wells. This is the only sustainable water we have for livestock. Livestock is the economic driver in Western South Dakota. If you take our water, you risk a much larger industry for South Dakota in exchange for 10 years of uranium mining. [...] And IF these wells leak to our water supply there is no restoring it back to a safe drinking water state which I am sure you are well aware of. The entire western half of South Dakota relies on

			the Minnelusa and Madison for its water supply. We can't haul water from anywhere else if the Madison or Minnelusa gets contaminated. [...] Facts: [HYPERLINK "http://projects.propublica.org/graphics/underground-injection-wells"]. From 2008 to 2010 there have been 6,723 that have tested positive for major leaking and 60,467 wells with violations. And 859 unauthorized injections!!!
00024	Ex. 6 Personal Privacy (PP)	Individual	Subject: Re: Dewey-Burdock templates This letter is in reference to the Underground Injection Control Program's Draft Permits for the Proposed Dewey-Burdock Uranium Mine and Deep Disposal Wells. History tells us that uranium mining cannot be done without creating and leaving contamination. In the past, groundwater has never been returned to its original condition at any In-Situ leach uranium mine in the U.S. [...] Considering these issues, it would be impossible to contain mining fluids and waste liquids. The likelihood of contamination of groundwater is extremely high. Additionally, liquid wastes pumped into the Minnelusa Formation through the proposed deep disposal wells is highly likely to be insufficient; again this raises the probability of groundwater contamination.
00025	Ex. 6 Personal Privacy (PP)	Individual	Subject: Powertech permits [...] "The Inyan Kara, Minnelusa, and Madison aquifers are the principal sources of ground water in the northern Black Hills, South Dakota and Wyoming, and Bear Lodge Mountains, Wyoming. The aquifers are exposed in the Bear Lodge Mountains and the Black Hills and are about 3,000 to 5,000 ft below the land surface ... The direction of groundwater movement is from the outcrop area toward central South Dakota." Please stop this. If it were happening to you or your family you wouldn't want it either. Please show some compassion and simple human decency.
00044	Ex. 6 Personal Privacy (PP)	Individual	The U.S. Geological Survey reported that the Madison and Minnelusa aquifers are vital water source for Rapid City and the surrounding areas and a uranium mining company wants to dump uranium waste in the aquifers, which opens that door of nuclear waste storage in the future, since they would already be dumping their waste fluids. [...] I believe it's an outright sacrilege to pollute our water systems for the all mighty dollar. Let's remember that future generations are counting on us to protect these precious aquifers and the air. Let's leave a legacy that future generations will be proud of – one that will keep them healthy – Water Is Life. Mni Wiconi means WATER IS LIFE.

00045	Ex. 6 Personal Privacy (PP)	Individual	"The Inyan Kara, Minnelusa, and Madison aquifers are the principal sources of ground water in the northern Black Hills, South Dakota and Wyoming, and Bear Lodge Mountains, Wyoming... The direction of groundwater movement is from the outcrop area toward central South Dakota." [USGS Study, https://pubs.er.usgs.gov/publication/wri864158] The proposed authorization would allow uranium waste to endanger Lakota water supplies and must not be allowed. Please rescind both of these permits.
00052	Ex. 6 Personal Privacy (PP)	Individual	According to Hollenbeck, Power Tech/Azarga plans on re-injecting the solution they use to extract uranium, back into the Minnelusa Aquifer. That is were so many of us get our drinking water and this is unacceptable!! I feel an urgent need to provide you with the link and person who is my 'go to pro' at the SD DENR
00054	Ex. 6 Personal Privacy (PP)	Individual	Here are only a few of the Fall River County Well Reports that were recorded in Pierre, SD. This is only a list of the domestic wells and does not include municipal wells. I have not had enough time to thoroughly analyze the reports, but I can assure you that The Minnelusa aquifer provides water to this region and cannot be jeopardized by injecting waste water from the in-situ mining process. I am also attaching the well report for our new State Veterans Home, which is also in the Minnelusa aquifer. We cannot allow anyone to jeopardize our water supply by injecting anything into our aquifers or by depleting our, already limited supply, of water for this process. Our water is finite and must be protected!
00064	Ex. 6 Personal Privacy (PP)	Individual	Subject: Draft Permits for UIC I am writing to you as a concerned American regarding the proposed Draft Permits to allow UIC a permit for injection wells for the in-situ recovery of uranium in the Inyan Kara Group aquifers and a permit for deep injection wells that would be used to dispose waste fluids into the Minnelusa Formation below the Inyan Kara after treatment. As we have seen in the past, while all precautions claim to be taken, what happens when the monitoring of the underground sources of drinking water become contaminated? It's too late then.
00071	Ex. 6 Personal Privacy (PP)	Individual	Subject: Uranium Mining and Disposal Permit in Black Hills I'm Ex. 6 Personal Privacy (PP) and reside on my small ranch/farm near Spearfish in the beautiful Black Hills. It is dismaying to know that our precious aquifers are being considered as a source for uranium mining and subsequent contaminated waste water disposal. My well accesses the drinking water for my family, friends and livestock from the Minnelusa, the same formation being targeted for the deep disposal injection wells.
00079	Ex. 6 Personal Privacy (PP)	Individual	If the waste that is to be pumped into the Minnelusa aquifer is so safe, let the owners and shareholders of Azarga/Powertech pump it into the ground in their own backyard for their children to enjoy.
00088	Ex. 6 Personal Privacy (PP)	Individual	"The Madison and Minnelusa aquifers are two of the most important aquifers in the Black Hills area because of utilization for water supplies and important influences on surface-water resources resulting from large springs and stream-flow-loss zones." – United States Geological

			Survey: Geochemistry of the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota
00098	Ex. 6 Personal Privacy (PP)	Individual	After mining, the company's plan is to pump uranium mining wastes back underground into the Minnelusa aquifer through as many as four deep disposal wells, endangering yet more communities water and well-being.
00124	Ex. 6 Personal Privacy (PP)	Individual	Second: PT will tell you that there is no communication between aquifers because of confining layers. However, in 3.4.1.4 it states that the Madison aquifer is 200 feet thick in the southern Hills up to 1000 feet regionally and could be connected to or communicate with the Minnelusa and the Deadwood aquifers which are the chosen repositories for the contaminated waste water, which will be injected under pressure. This communication could prove to be unsafe for obvious reasons. Additionally, in 3.4.1.7, P/T states that "no evidence of karsting has been observed". (erosion due to dissolution producing fissures and sinkholes) This is a below ground phenomenon and simply because something has not been observed at this time does not mean it will not occur later or that it is not there now. As the cave system in the Hills is known to be everywhere, it is only logical that there are fissures everywhere which will allow for "communication" between aquifers as stated above.
00134	Ex. 6 Personal Privacy (PP)	Individual	At the beginning of the first hearing in Rapid City, I chatted with Mr. Minter about the proposed mine. While he was explaining the project he said since the Minnelusa aquifer is not used for drinking water, there are no concerns about waste injection into the Minnelusa. Your presentation gave me the impression that the EPAthinks that the Minnelusa aquifer is not used for drinking water. As I mentioned in my spoken testimony in Rapid City, the Minnelusa aquifer is a drinking water source for many people according to our state Department of Environment and Natural Resources. I recall hearing one member of the public standing at the podium and saying that said her grandson is drinking Minnelusa water. It is appalling to realize that EPAstaff members are unaware of the indisputable fact that the Minnelusa aquifer is indeed a drinking water source for many South Dakotans. This part of South Dakota is particularly dry. How dry? Cacti, sage and yucca thrive in our sunny, dry climate. We cannot afford to risk contamination of the Minnelusa aquifer. Please do not issue any further permits to Powertech/ Azarga for any portion of their proposed project, including permission for other companies to inject their waste into Powertech/Azarga's proposed injection wells.
00160	Ex. 6 Personal Privacy (PP)	Individual	There are issues that arise when evaluating the safety and potential consequences of tampering with uranium, especially within/close to these aquifers. One major concern is that these deep injection wells are supposed to place this wastewater into the Minnelusa Formation where it will hopefully continue to remain and prevent any harm, but the threat is still there (EPAa, 2016). The water isn't guaranteed to stay within the Minnelusa Formation as the USGS has identified that, "Fracturing from folding and brecciation near the outcrop may have increased the permeability of the lower part of the Minnelusa a considerable, but unknown, amount"

			(Kyllonen, D. P., & Peter, K. D., 1987). This is obviously concerning to know that this wastewater may not remain within the Minnelusa Formation and permeate through, especially considering how many other aquifers are in the surrounding areas. It even states on EPA's UIC website that, "This disposal can pose a threat to ground water quality if not managed properly," and "The different types of Class V wells pose various threats" (EPAa, 2016). While precautionary measures can be taken, there is absolutely no guarantee that Powertech will be able to properly manage and avoid potential accidents/threats from occurring.
00166	Ex. 6 Personal Privacy (PP)	Individual	Intro: My name is Ex. 6 Personal Privacy (PP) 7 year resident, raising kids in the black hills. I own property along the Cheyenne River, I have animals that drink from it, I have an Inyan Kara domestic well that supplies household water and drinking water for livestock. I haul my family's drinking water from a minnelusa well. (see attached well log data from Ferguson well adjacent to Belitz 320 ft well. Belitz well log is missing) (note flowing cave in Ferguson well). Yes, I understand the interest a mining company would have in ISL at the Dewey / Burdock location . I do, however, feel that my water and the water of my community could be irreversibly harmed. Besides inadequate standards for settling pond waste that could potentially contaminate the river and the much utilized Angostura Reservoir, today we are talking about Aquifers. The Inyan Kara and Minnelusa. UIC (Underground Injection Control) Class III Area Permit for Inyan Kara Group Aquifers. These proposed mining activities pose a risk to my Inyan Kara water by undetected or late detected excursions as I am down gradient from the mining activity. UIC Class V area Permit for deep injection wells that would be used to dispose of in situ mining waste fluids into the Minnelusa Formation. The Minnelusa aquifer is a high quality and well utilized aquifer in the southern black hills. In addition to the domestic Minnelusa well that we haul drinking water from, this aquifer sits approximately 1000 ft below my property making it a potential drinking water source for my family and livestock for generations to come. According to "Atlas of Water Resources of the Black Hills", the Minnelusa Aquifer flows from the proposed ISL site to my property. The contaminates injected are likely to pollute this potential drinking water source sometime in the future. When I spoke with 4 Hydrologists at the USGS on March 29 th 2017, I learned the following. Yes, the flow model (Fig. 114, pg.103 Atlas of Water Resources of the Black Hills) does indicate the Minnelusa flowing from Dewey / Burdock to the south east. However, you can not just look at this model. The water in these aquifers, can be really hard to track their flow. In cave environments such as the Minnelusa , underground water almost flows like a river. There are local and regional impacts on the flow systems that are not indicated on Fig. 114. According to a National Water Data Base, there are a minimum of 125 wells drilled into the Minnelusa Aquifer in Fall River County. I believe there are more. My Families Well was drilled approximately 20 years ago and there is no record of it in the current State DENR Well log data site. Speaking with a DENR employee May 9 th ,2017, I was told that many well logs were not

			submitted especially those during or before the 1980's. We know that the Minnelusa and the Madison (a highly utilized and extremely important aquifer) mix. The USGS Atlas of Water Resources of the Black Hills, Pg 109 Table 13 indicates Cascade Springs is mostly Madison with dissolved Minnelusa minerals. Cascade Springs is also a utilized drinking water source, Cascade falls is a highly visited swimming area attraction, and the 1880 irrigation system from this source provides water for over 1000 acres of hay, fruit and vegetable production and livestock watering ponds for area land owners including my own pond, hay fields, and apple orchard. The Minnelusa Formation is overlain by the Opeche Shale, which separates the Minnelusa aquifer from the Minnekahta aquifer. The Minnelusa aquifer often is hydraulically separated from the underlying Madison aquifer by shales in the lower portion of the Minnelusa Formation. However, in many areas the Minnelusa aquifer is in hydraulic connection with the Madison aquifer. (https://pubs.usgs.gov/ha/ha745c/ha745cIntro.html Potentiometric Surface of the Minnelusa Aquifer in the Black Hills Area, South Dakota By Michael L. Strobel and Joel M. Galloway, U.S. Geological Survey; and Ghaith R. Hamade and Gregory J. Jarrell, South Dakota School of Mines and Technology U.S. GEOLOGICAL SURVEY Hydrologic Investigations Atlas HA-745-C Prepared in cooperation with the South Dakota Department of Environment and Natural Resources and the West Dakota Water Development District) Information on Deep Well injection in North Dakota State geologist Ed Murphy says injection wells are required to be drilled into the Dakota Group zone, a layer about 5,000 feet down where the Inyan Kara sandstone formation provides a porous container for the liquid. (LAUREN DONOVAN Bismarck Tribune Mar 31, 2016) Other requirements for the permitting process: ● SWD's over shallow aquifers require a geotechnical analysis by a qualified, independent contractor before a proposed location will be considered. This is to determine the suitability of the shallow subsurface geology to protect the shallow aquifer. ● Injection must be into a formation with an upper and lower confining zone to prevent migration of fluids into other formations or fresh water zones. In North Dakota, the disposal zone is typically one half mile to one mile below the surface, into the Dakota Group. (https://www.dmr.nd.gov/oilgas/undergroundfaq.asp#mr10) Because of this scientific data, I believe the EPA should not even consider permitting a UIC Class V area Permit for deep injection wells that would be used to dispose of in situ mining waste fluids into the Minnelusa Formation. The Minnelusa is too shallow, it is unconfined, it is known to mix with a very important aquifer, and is itself is an important and currently used aquifer. Thank you for protecting our water,
